PCN45

PROJECTION OF THE PATIENTS' POPULATION TREATED FOR CHRONIC MYELOID LEUKEMIA IN CHRONIC PHASE IN FRANCE: AN EPIDEMIOLOGICAL MODEL AT THE HORIZON 2015

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OBJECTIVES: Chronic Myeloid Leukemia (CML) is a myeloproliferative disease associated with a chromosomal translocation (Philadelphia chromosome). Since 2003 life-long treatment by Tyrosine Kinase Inhibitors (TKIs) have dramatically improved survival. The objective of this study was to predict the characteristics of the population under TKI treatment at the horizon 2015. **METHODS:** An epidemiological model was developed over the period 2003-2015 on first and following line therapies, combining demographic, incidence, prevalence, survival data and probability of resistance or intolerance in each line. Data were derived from published randomized clinical studies. The model was tested over the period 2003-2009 by comparison with retrospective market data and then extrapolated to the period 2010-2015. **RESULTS:** At the time of the first TKI launch (imatinib) in 2003, a prevalent group of 1,878 patients started treatment. Second-generation TKIs dasatinib and nilotinib were then made available in France between November 2007 and May 2008 as second line therapy, and potentially in mid-2011 as first line. Despite a stable annual number of 600 incident cases (1.25 x10-5) of CML eligible for a TKI first line treatment, the total number of patients under treatment increased to 7260 in 2010 (a 3.9-fold increase since 2003) of which 1083 were in second line (15%). The extrapolation model predicted a total of 10,069 treated patients in 2015 of which 1,618 in second line (16%) representing a 39% 5-year increase. **CONCLUSIONS:** The dramatic overall survival benefit associated with TKIs was a key factor for explaining the growth of the CML treated population aside from the emergence of second line therapies.

PCN46

COST OF METASTATIC PROSTATE CANCER TREATMENT IN THE 12 MONTHS FOLLOWING DIAGNOSIS PER PATIENT IN RUSSIAN FEDERATION

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OBJECTIVES: With 75,880 patients under medical supervision in 2007, prostate cancer is the fourth most frequent cancer in Russia and the first in terms of increase of mortality (+21,6%) with ,8909 deaths/year. Moreover metastatic prostate cancer (MPCa) holds more than 60% of these patients at the same time being the leading expenditure driver. The purpose of this study was to evaluate the burden of illness and total per patient costs, associated with managing patients with (MPCa) in the 12 months following diagnosis in Russia from perspective of public healthcare system. **METHODS:** A costing model combined the data of official algorithms (standard of treatment approved by Ministry of Health) and guidelines of MPCa management, as well as local experts opinion and published data on resource use and unit costs from published sources to calculate total per patient direct costs of MPCa treatment. Direct costs of MPCa include expenses on medical services and pharmacotherapy (cytostatics, hormones and antihormones, accompanying and other drugs). As initial treatment following diagnosis radiotherapy was used most frequently. Use of chemotherapy was low. Relapse and mortality were not factored into the model. Total direct medical costs of initial treatments following diagnosis per patient were calculated for MPCa in 12 months timeframe. **RESULTS:** Total per patient direct costs following diagnosis was 810,529 roubles. Analysis of the costs structure showed that hormone therapy represents a significant higher cost to surgery, while radiotherapy had the highest cost proportion. Pharmacotherapy was the major driver of MPCa treatment cost (more than 50% share from all expenditures). **CONCLUSIONS:** In this study quantifying the cost of MPCa treatment in Russia was found a significant resource utilization and healthcare costs, along with the major cost drivers. Given the number of new cases diagnosed in Russian Federation, these estimates suggest a large total spending on the disease.

PCN47

CLINICAL AND ECONOMIC BURDEN OF BREAST CANCER IN JAPAN: A DIAGNOSIS PROCEDURE COMBINATION–BASED CLAIMS DATABASE SURVEY

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OBJECTIVES: In 2008, the annual medical expenditure on cancer treatment in Japan was approximately 16 trillion yen. In the past decade, a few molecular-targeted drugs (MTDs) were developed for the treatment of HER2+ metastatic breast cancer (HER2-MBC). The number of MTD-treated patients increases every year, which is a concern with regard to the economic impact of cancer therapy. Trastuzumab is the most popular alternative to HER2-MBC therapy in Japan, but it has a high national health insurance price of approximately 220,000 yen per month for women weighing 50 kg. To estimate the clinical and economic burden of breast cancer (BC) and HER2-MBC therapies, we commenced a large clinical database survey, by examining the diagnosis procedure combination (DPC)–based claims, which included flat payment schemes. **METHODS:** The database, which consists of 15 DPC-targeted institutions that had contracted with Medical Data Vision Ltd., includes approximately 400,000 patients. To extract the pertinent population and estimate the clinical and economic burden of MTDs, a target population consisting of individuals diagnosed with BC on or before March 31, 2010, aged more than 20 years, and treated with MTDs for HER2-MBC was chosen. The observation period was April 1, 2008 to March 31, 2010. **RESULTS:** During the observation period, 2,419 individuals were diagnosed with BC. Of these, 98 were receiving or had received MTDs. The observed estimated economic cost of BC treatment was 994,000 yen, with an observation duration of approximately 14.0 person-months. The cost of HER2-MBC treatment with MTDs was estimated at 4,455,000 yen with a duration of 17.4 person-months. CONCLUSION: HER2-MBC therapy seriously impacted the annual medical expenditure in Japan and had a rare survival duration. The database was useful for conducting an economic analysis of cancer treatment in Japan.

PCN48

COSTS OF TUBEROUS SCLEROSIS COMPLEX (TSC) NEUROLOGICAL AND DEVELOPMENTAL MANIFESTATIONS IN BRAZIL

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OBJECTIVES: To estimate direct medical costs of Tuberous Sclerosis Complex with neurological and developmental manifestations under the Brazilian public health care system perspective (SUS). **METHODS:** A retrospective database analysis was developed from ICD-10 search from January/2008 (revision of table of procedures by SUS Information Technology Department/DATASUS) to February/2011. Neurological and developmental manifestations of TSC included in the study were subependymal giant cell astrocytoma (SEGA), epilepsy, epileptic syndromes/infantile spasm, mental disability and autism, based on prevalences and expected costs to SUS. Direct medical costs per patient per year for each manifestation were estimated based on DATASUS ambulatory (high complexity) and hospital settings, whose databases included 2,016,188 and 9,236,360 persons, respectively. Epidemiologic literature was applied to correct misreported data and estimate average cost per patient per year for all manifestations. Sensitivity analysis was performed for the prevalence of manifestations. Costs were reported in 2010 Reals. **RESULTS:** The most prevalent procedure (and respective unit cost) for SEGA, epilepsy/epileptic syndromes/infantile spasm, and mental disability/autism were surgery (R$6302), hospitalization for uncontrolled seizure (R$585) and anti-epileptic drugs (R$1887), and psychiatric ambulatory treatment (R$275/R$892), respectively. The average direct medical costs per patient per year at SUS were R$7672 for SEGA, R$2,570 for epilepsy, R$1,349 for epileptic syndromes/infantile spasm, R$4668 for mental disability and R$2,276 for autism. Average cost per patient per year for all manifestations was R$19,180. This cost varied from R$13,580 to R$22,556 in sensitivity analysis. TSC neurological and developmental manifestation costs are expected to be underestimated due to lack of access and provision of health services, mainly in long-term disorders. **CONCLUSIONS:** TSC neurological and developmental manifestations impose significant economic burden to the Brazilian public health care system. However, the real economic burden is potentially higher as the diagnosis and treatment of the disease and its manifestations are underestimated considering restrictions of access and health service provision.

PCN49

INCIDENCE RATE AND BURDEN OF ILLNESS ASSOCIATED WITH HUMAN PAPILLOMAVIRUS RELATED GENITAL CANCERS IN SPANISH WOMEN

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OBJECTIVES: To review incidence rate and burden of illness associated with Human Papillomavirus (HPV) related female genital (cervical, vulvar and vaginal) cancers in Spain. **METHODS:** Databases and registries searched for data retrieval included EMBASE, PUBMED, Cochrane, Globocan, WHO, SEER and relevant grey literature. Studies reporting epidemiology and costs associated with HPV-related genital cancers in females were of interest. **RESULTS:** In 2008, age standardized incidence rate of cervical cancer per 100,000 females was 6.3 in Spain compared to 5.7, 7.2, 10.6 and 15.3 in US, UK, Europe and worldwide, respectively (Globocan 2008). The incidence of cervical cancer was highest among Spanish women aged 45-54 years. Incidence rate of vulvar and vaginal cancers ranged from 1.6-4.0 and 0.3-0.7 per 100,000 females, respectively. Additionally, vulvar and vaginal cancers were most common among older women (≥70 and ≥65 years, respectively). In the same year (2008), mortality rate due to cervical cancer was 1.9 per 100,000 females (WHO 2010). Mortality rate for vulvar-vaginal cancer was 9.34% from 1997-2008 (Gil-prieto 2011). Annually, 7.6 million pap smear tests were performed in Spain at the cost of €622 million (Castellsague 2009). Average number of hospitalizations per year was 4151 due to cervical cancer and 17,883 due to vulvar-vaginal cancers. Mean (SD) length of hospital stay due to cervical cancer was 8.7 (15.2) days and 8 (10) days due to vulvar-vaginal cancer (Gil 2007, Gil-prieto 2011). Estimated annual cost of hospitalization due to cervical cancer and carcinoma in situ was €19 million (Gil 2007). Indirect costs (productivity loss) associated with mortality related to cervical cancer were €1.1 million (Oliva 2006). **CONCLUSIONS:** HPV-related genital cancers have significant incidence and mortality rate in Spanish women with higher risk in elderly female population. The direct and indirect costs incurred due to genital cancers are substantial and reflect considerable economic burden.

PCN50

FIRST AND SECOND LINE LUNG CANCER TREATMENT UTILIZATION PATTERNS AND ASSOCIATED COSTS IN A UNITED STATES HEALTH CARE CLAIMS DATABASE

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OBJECTIVES: Because treatment options for lung cancer are changing rapidly, it is important to understand current treatment patterns and cost implications. We conducted a retrospective claims analysis to identify common lung cancer regimens and direct medical costs in a large US commercial health insurance and Medicare Advantage database. **METHODS:** We identified patients with lung cancer receiving 1st or 2nd line chemotherapy between January 2006 to December 2010

using an algorithm utilizing enrolment records and ICD-9 codes. A patient flow algorithm was constructed to define treatment cohorts. Patients were stratified based on the lung cancer drug treatment received following diagnosis and first line therapy. Total costs are report for the 1 year follow up period after initiation of drug treatment. **RESULTS:** A total of 2739 lung cancer patients were included in the analysis; 53% >65 yr. Paclitaxel or docetaxel plus platinum were the most commonly utilized 1st line regimens. Pemetrexed plus docetaxel was the most common 2nd line treatment. Among patients receiving 1st line treatment and remaining enrolled in the health plan, only 16.7% received 2nd line treatment. Total costs (average +/− SD) in the year following chemotherapy initiation was $70,205 ± 66,956 (range $50,000-$120,000) for those with 1 line of therapy versus $93,432± $66,208 (range $62,000-$169,000) with two or more lines. For all patients, average ambulatory care costs (which included IV administration costs) were $34,449±40,847, intravenous drug costs ($17,246± 27,488), and inpatient hospital costs (14,180 ±$31,409) comprised the largest proportion of costs in the year following chemotherapy initiation. **CONCLUSIONS:** In this analysis, few lung cancer patients received 2nd line treatment.. For those patients who received 2nd line treatment and beyond, direct medical care costs are over $23,000 higher over years 2006-10 compared to those receiving only one line. Ambulatory costs comprised the greatest proportion of total costs (50%).

PCN51

HEALTH CARE RESOURCES AND COSTS ACROSS LINES OF THERAPIES IN INSURED PATIENTS WITH METASTATIC BREAST CANCER IN THE UNITED STATES

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OBJECTIVES: To compare health care resource utilization (HRU) and costs by line of therapy (LOT) among patients with metastatic breast cancer (MBC). **METHODS:** MarketScan® databases, January 1, 2005 to December 31, 2009, were used to identify women aged ≥18 with breast cancer (ICD-9-CM of 174.xx). The index date was the first prescription fill or administration of anti-neoplastic agents. Either a 90-day gap in treatment or initiation of a new regimen ended each LOT. Per patient per month (PPPM) expenditures for utilizers of inpatient (IP), outpatient (OP), emergency department visits (ED), MBC-drugs (oral and infused), hormonal, radiology, and supportive therapies across four LOTs (1L-first line, 2L-second, 3L-third, 4L-fourth) were statistically compared. HRU rates (Visits per patient with ≥1 Visit) were also compared. **RESULTS:** A total of 8494 MBC patients (1L:7,765; 2L:4,077; 3L:2,033, 4L:1,059) were included. Bone metastases were most common (43.9%) at index followed by liver (17.7%) and lung (12.8%). PPPM expenditures for IP (1L: $1,183, 2L:$1,318, 3L: $1,401, 4L:$1,670; p=0.660), OP (1L:$1,751, 2L:$1,624; 3L: $1,626; 4L:$1,626, p=0.413), and ED (1L:$64, 2L:$67, 3L: $73, 4L:$57 p=0.997) were not stastically siginificantly different across the four LOTs. PPPM expenditures for MBC oral-drugs (1L:$460, 2L:$530, 3L:$589, 4L:$743,p=0.37), hormonal (1L:$87 , 2L:$65, 3L: $70, and 4L:$55,p=0.388), and radiology therapies (1L:$290,2L:$280,3L: $280,and 4L: $271, p=0.999) were also not statistically different across LOTs. MBC infused-drugs (1L:$4096,2L:$4,607,3L:$4,841, 4L:$4,521,p=0.001) did differ. Within supportives, PPPM across LOTs were stastically different for anti-emetics (1L:$283,2L:$321;3L: $320;4L:$311,p=0.007) and pain medications (1L:$42,2L:$50;3L:$62;4L:$71,p=0.002) but not for IV-bisphosphonates (1L:$406,2L:$412;3L:$419;4L:$410,p=0.964). The mean HRU rates for IP (range1.4-1.4), ED (1.7-1.8), OP hospial (8.4-9.4) office-visit (11.2-12.6), and Other outpatient visits (18.9-20.5,) were similar across LOTs. **CONCLUSIONS:** No significant variation in the PPPM costs of (IP, OP, ED, MBC oral drugs, hormonal, radiology, or IV bisphosphonates) was oberved across four LOTs. LOT costs differed for infused drugs, anti-emetics, and pain medication within this MBC population. Further research is required to explore these variations.

PCN52

ECONOMIC IMPACT OF HEALTHCARE RESOURCE UTILISATION PATTERNS AMONG PATIENTS DIAGNOSED WITH ADVANCED MELANOMA IN THE UK, ITALY, AND FRANCE: RESULTS FROM A RETROSPECTIVE, LONGITUDINAL SURVEY (MELODY STUDY)

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OBJECTIVES: To describe patterns of health care resource utilisation and associated costs for patients with advanced melanoma in the UK, Italy, and France. **METHODS:** For patients receiving systemic treatment, or supportive care, hospitalisation, hospice care, and outpatient data were retrieved retrospectively from advanced disease diagnosis until 1 May 2008 as part of a multicountry observational study (MELODY; Lorigan et al., ISPOR 2010). Costs were estimated by multiplying the utilisation level by unit cost. In an exploratory analysis, costs were compared between individuals who died within one year of initiating first-line treatment (short-term survivors) and those with ≥1 year follow-up (long-term survivors). **RESULTS:** Hospitalisation costs were highest in France (€6262 per-person compared with €3225 in the UK and €2486 in Italy), reflecting higher rates of hospitalisation. In contrast, outpatient costs were highest in the UK (€782 per-person, compared with €115 in France and €72 in Italy), reflecting both the highest rate and frequency of outpatient visits and the highest cost per visit. While daily hospice costs were lowest in the UK, frequency and duration of hospice care were notably higher than in Italy or France, resulting in the highest total hospice costs per-person. Hospitalisation rates were consistently higher during supportive care compared with systemic therapy. It should be noted that roughly a third of patients entered clinical trials and therefore could not be included in the analysis. In exploratory analysis, total costs were generally higher for long-term survivors, but monthly per-patient costs were generally lower for long-term survivors, consistent with a hypothesis that resource utilisation and costs do not necessarily increase proportionally with extended survival. **CONCLUSIONS:** Total costs associated with resource utilisation for advanced melanoma patients varied across countries. Overall cost differences were due to differences in frequency and intensity of utilisation patterns and variation in unit costs of health resources.

PCN53

ECONOMIC BURDEN OF HPV-RELATED HEAD & NECK AND ANAL CANCERS IN GERMANY

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OBJECTIVES: Data on economic burden of head & neck (H&N) and anal cancers in Germany is scarce. Human papillomavirus (HPV) infection is likely to be responsible for 16% to 72% of H&N cancer, and 84% of anal cancer. This study aimed to assess the annual management costs (hospitalisations, inpatient rehabilitations, sick leaves) associated with these HPV-related cancers from the German Statutory Health Insurance (SHI) perspective. **METHODS:** This study was based on the retrospective analysis of five German databases, which cover hospitalisations (German Federal Statistical Office-Destatis), major categories of treatment such as surgery, radiotherapy and medical (Institute for the Hospital Remuneration System-InEK), inpatient rehabilitations (German Public Pension Insurance-DRV) and sick leaves (Local-SHI-funds, Federal Ministry of Health). Associated number of cancers, health care resource use, and costs were identified and extracted using ICD-10 codes (H&N cancer: C01-C06, C09-C14, C32; anal cancer: C21). The HPV-related cancers total cost was estimated based on the percentage of each cancer and anatomical site likely to be attributable to HPV. **RESULTS:** In 2008, 69,631 hospitalisations for H&N and anal cancers were reported (92% due to H&N cancer), whereas the number of inpatient rehabilitations and sick leaves were 5,415 and 18,391, respectively. The estimated total cost associated with HPV-related H&N and anal cancers was €111 million, mainly represented by H&N cancer (74%). Hospitalisations, inpatient rehabilitations, and sick leaves, accounted for 82%, 4%, and 15% of total HPV-related cost, respectively. **CONCLUSIONS:** The estimated annual cost of HPV-related H&N and anal cancers contribute to a significant economic burden in Germany, appearing to be as important as cost of HPV-related cervical cancer, and should be considered when assessing health and economic benefits of HPV vaccination in both genders. Furthermore, this cost is likely to be underestimated since outpatient management cost is not included, and may be significant for these cancers.

PCN54

HOSPITAL COSTS RELATED TO HEPATITIS C VIRUS INFECTION: FIRST ANALYSIS OF THE FRENCH HOSPITAL NATIONAL DATA BASE

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OBJECTIVES: There are approximately 4 million of Hepatitis C Virus (HCV) carriers in Europe. HCV infection is a leading cause of liver cirrhosis (LC), transplantation (LT), and hepatocellular carcinoma (HCC). On the brink of new antiviral treatments in France, we aimed at evaluating the 2009 hospital costs related to chronic hepatitis C. **METHODS:** All hospital stays with a B18.2 ICD-code were extracted from the 2009 hospital database and distributed in five groups: uncomplicated chronic hepatitis C, LC, HCC, LT, and unclassifiable. Costs were calculated using the French medical information system (PMSI). **RESULTS:** A total of 27,258 stays were identified (15,482 patients): uncomplicated hepatitis C (42%), LC (41%), HCC (13%), LT (2%), unclassifiable (2%). Mean length of stay was 6.1 and 28.7 days in medical and surgical units respectively; 8,214 medical procedures for baseline/follow-up assessments were carried out in patients with uncomplicated hepatitis, including 1,970 liver biopsies. Annual cost was estimated at 65,652,651€, including 47% for LC, 18% for HCC, and 19% for LT. The mean annual cost per patient increased from 1,049€ (uncomplicated hepatitis) to 4,748€ for LC, 6,513€ for HCC, and 40,152€ for LT (expensive drugs excluded). Expensive drugs accounted for 7% of total costs in public sector (95% of all stays), including 30% for cancer therapies, 33% for erythropoietins, 12% for anti-infection drugs and 11% for hemostasis. **CONCLUSIONS:** This first analysis devoted to HCV infection of the French hospital national database brings new and essential information. It shows that 84% of HCV-related hospital costs are attributable to advanced liver diseases, and 19% to the 2% of patients' recipients of a liver transplant. Together with more efficient therapies, enhancing screening and access to treatment policy could substantially relieve the social burden of HCV.

PCN55

THE ECONOMIC BURDEN OF ADJUVANT CHEMOTHERAPY IN GERMANY

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OBJECTIVES: In Germany, breast cancer is the most frequent cancer. In 2007, 7.2% of total German health care expenditure was spent on breast cancer. Despite, its